

86774

July-06-12 2:44:15 PM

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 7/06/12 **Start Qty:** 1.00 ***1***

Required Date: 8/10/12 **Req'd Qty:** 1.00 *** 1 ***

Reference:

Run Start *NR1*

Approvals: Process Plan: D Date: 1207-9 Tooling: _____ Date: _____

Stop ***NR2***

OC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D3391	I

0.00

100

Skidtubes

Skidtubes

Memo

0.00

Skidtubes

Cut extrusion to 46.52 +0.010 -0.020

- Dec 12/07/30

110

0.00

110

BENDING MACHINE - SKIDTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

Bend as per Dwg D3391 Using Bend Prog 3391021

-De 12/07/30

120

QC5- Inspect part completeness to step on W/O

0.00

120

QC

Memo

0.00

Quality Control

6.82"

DAS
03
9-89

12-7-30

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 86774

86774

Page 2

July-06-12 2:44:15 PM

Item ID: D3391-021 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Fwd Tube Assembly
 Start Date: 7/06/12 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 8/10/12 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130		0.00							
130	HAAS CNC VERTICAL MACHINING #1								
HAAS 1	Memo	0.00							
HAAS CNC vertical machine #1	1-Machine as per Folio FA590 Rev. <u>AA</u> & Dwg D3391 Rev. <u>I</u> Identify as D3391-1 2-Deburr			B.A 12/08/08		1	0		
140		0.00							
140	QC2- Inspect parts off machine FAI/FAIB								
QC	Memo	0.00							
Quality Control				B.A 12/08/08		1	0		
150		0.00							
150	CONVENTIONAL MILLING MACHINE								
Mill Conv	Memo	0.00							
Conventional Milling Machine	Drill X1 Aft cap as per Dwg D3391 .1875" dia			02-08-08		1			

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Item ID: D3391-021

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Fwd Tube Assembly

Start Date: 7/06/12 **Start Qty:** 1.00 ***1***

Cust Item ID:

Required Date: 8/10/12 **Req'd Qty:** 1.00 ***1***

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/
Work Center ID

Operation Description

Set Up/ Run Hours

Tool ID**Tool #****Plan
Code**

**Accept
Qty**

Reject
QtyReject
Number

**Insp.
Stamp**

160

QC2- Inspect parts off machine FAI/FAIB

0.00

160

0.00

~~9~~ 12-08-08

QC

Memo

Quality Control

170

QC8- Inspect parts - second check

0.00

170

0.00

29 12.8.13

QC

Memo

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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 Start Date: 7/06/12 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 8/10/12 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	Skidtubes	0.00							
180									
Skidtubes	Memo	0.00							
Skidtubes	1-Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875" holes drilled in previous step								
	2-Drill float bag holes as per Dwg D3391 using DT8798(Do not open tow cap holes to finish size) (ONLY DRILL HOLES MARKED "A")								
	3-Open tow cap holes to .208" as per Dwg D3391								
	4-Open Tow Ring hole to .640" as per Dwg D3391								
	5- open float bag holes 0.328" and counter sink as per dwg D3391								
	6-Deburr & Scribe Batch number Inside aft end.								
	7-Transfer drill D3391-021 with D3391-023 ***NO WEARPLATE HOLES ARE TRANSFER DRILLED***								
190	QC5- Inspect part completeness to step on W/O	0.00							
190									
QC	Memo	0.00							
Quality Control									



OC 12/09/11

CF 12-9-11

17/06/12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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 Start Date: 7/06/12 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 8/10/12 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	Chemical Conversion Coat per QSI005 4.1	0.00							
200									
HandFinish	Memo	0.00							
Hand Finishing									
210	QC7-Inspect Chemical Conversion Coat	0.00							
210									
QC	Memo	0.00							
Quality Control									
220		0.00							
220									
Skidtubes	Memo	0.00							
Skidtubes	1-instal spacers as per dwg D3391 A/R Magnabond 6398 batch: 122 666 exp. date: 12/09/25 cure time 12hrs. as per QSI015 2- grind crossbolt flush 3-back drill crossbolt if necessary								

03 03 89 **DD** 12-9-25

- Dec 12/09/25
 - Dec 12/09/26

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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 Required Date: 8/10/12 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230	QC5- Inspect part completeness to step on W/O	0.00							
230									
QC	Memo	0.00							
Quality Control									
235	Pressure Wash per QSI005 4.3	0.00							
235									
HandFinish	Memo	0.00							
Hand Finishing	AND REALODINE AS PER PAR09-043								
240	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
240									
Powdercoat	Memo	0.00							
Powder Coating	START TIME: 10-15 OVEN TEMPERATURE: 320°F FINISH TIME: 10-45								

DAS
16
9-1

1 76 12-9-27

1X4 MF 12/04/28

W122878

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Work Order ID 86774

86774

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 Revision ID: Stop ***NS2***
 Item Name: Fwd Tube Assembly
 Start Date: 7/06/12 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 8/10/12 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250	QC3- Inspect Part Finish	0.00							
250									
QC	Memo	0.00				1x	1	HL 12/10/01	
Quality Control									
255		0.00							
255	Skidtubes								
Skidtubes	Memo	0.00				1x	1	HL 12/10/01	
Skidtubes	✓ **** install D3591-1 spacer as per DSI9364 and wearplate as per DWG ****								
257	QC5- Inspect part completeness to step on W/O	0.00							
257									
QC	Memo	0.00							
Quality Control									

DAS
16
9-09 17/10/01

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Required Date: 8/10/12 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start ***NR1***
QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
260 *260* Packaging Packaging	Identify as per dwg & Stock Location: <u>w10</u> Memo	0.00 0.00	0412-742-0431	887069			1x	d	12/10/10
280 *280* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00							12/10/11 MF 12-10-01

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

Picklist Print

July-06-12 2:44:15 PM

Page 1

Work Order ID: 86774
Parent Item: D3391-021
Parent Item Name: Fwd Tube Assembly

Start Date: 7/06/12

Required Date: 8/10/12

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP A05.09.13New issue KJ/JLM
IPP B06.02.10Dwg rev.D ecn 773 EC
IPP C06.05.02Added inspections EC
IPP D 07.03.13 rev F dwg EC
IPP E 07.11.07 revG dwg ecn1053P EC verified by: DD
IPP Rev:f ECN 1056 07-11-12 DD verified by: EC
IPP Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC
IPP Rev:H 08-09-10 revH as per dwg DD verified by:EC
IPP Rev I 09.02.02 added hardware EC verified by: DD IPP Rev:J 11.11.14 AS PER REV.I
DD verified by:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4095-051 Wearpad Assembly		Manufactured	No			255	Each	23.0000	1	1		12/10/10	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				FP002		23							
				81613		11							
				85601		12							
D6013-047 Skidtube Material		Manufactured	No			100	Each	81.0000	1	1		12/07/30	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG		81							
				72505		81							
D3670-4-200 SPACER		Manufactured	No			220	Each	98.0000	4	4		12/09/25	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG		46							
				80360		40							
				84504		6							
				LG001		52							
				78606		4							
				81972		7							
				85460		41							

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr.	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Picklist Print

July-06-12 2:44:15 PM

Page 2

Work Order ID: 86774

Parent Item: D3391-021

Parent Item Name: Fwd Tube Assembly

Start Date: 7/06/12

Required Date: 8/10/12

Start Qty: 1.00

Required Qty: 1.00

D3401-041
Tow Cap Assembly

Manufactured No

255 Each 11.0000

1 12/10/01

Location

Loc Qty

Loc Code

FP002

11

82302

8

83432

3

x1

AN960C10L
washer

NAS1149C0332R

Purchased No

255 Each 21.0000

10 12/10/01

Location

Loc Qty

Loc Code

ST

21

107534

21

AN3C4A
BOLT

Purchased No

255 Each 4,260.0000

10 12/10/01

Location

Loc Qty

Loc Code

ST350

4260

120187

31

120521

28

120769

38

121205

155

121556

8

122151

4000

1122814

x10

D3672-1
Phenolic Washer

Manufactured No

255 Each 1,362.0000

4 12/10/01

Location

Loc Qty

Loc Code

ST060

1362

72229

4

76277

13

80369

335

83608

500

85222

510

x4

AELS-1032-225

Purchased No

255 Each 0.0000

10 12/10/01

INSERT * AL7-1032-225 / M122296

July-06-12 2:44:15 PM

Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
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FIRST ARTICLE INSPECTION CHECKLIST

Rev	Date	Change	Revised by	Approved
A	06.04.27	New Issue P/O D3391-011/-021	KJ/JLM	
B	06.06.19	Tolerances revised per D3391 Rev. E	KJ/JLM	
C	07.03.21	Dimensions removed per Dwg rev. F	KJ/JLM	
D	07.11.23	Dwg Rev. updated	KJ/EC/DD	
E	09.12.14	Dwg Rev updated	KJ	
F	11.06.21	Dimension 0.500 added	KJ	
G	12.05.15	Dwg Rev updated	KJ	

SHOP COPY

RETURN TO

ENGINEERING

UNCONTROLLED COPY

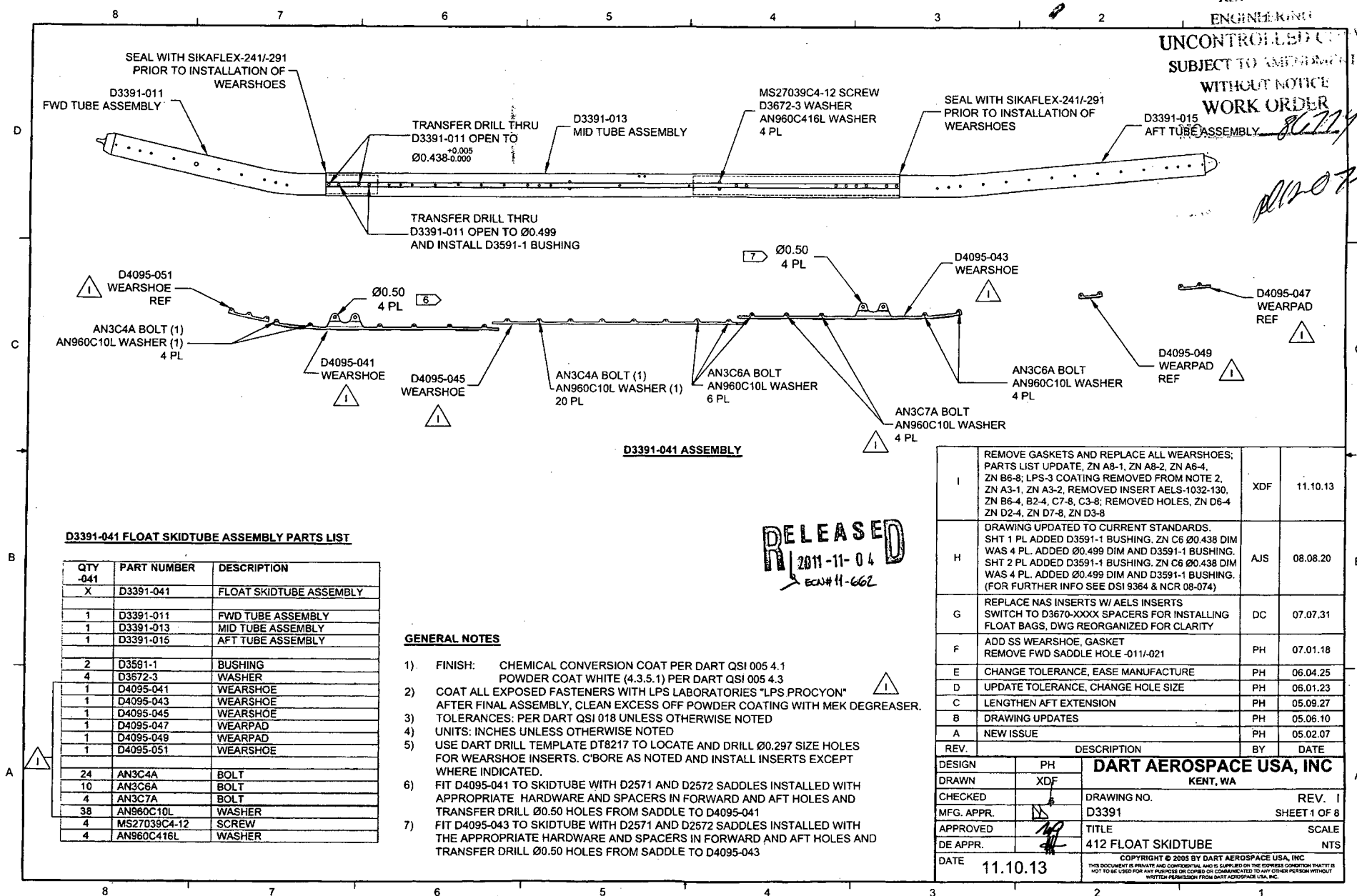
SUBJECT TO INFORMATION

WITHOUT NOTICE

WORK ORDER

86774

112079



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

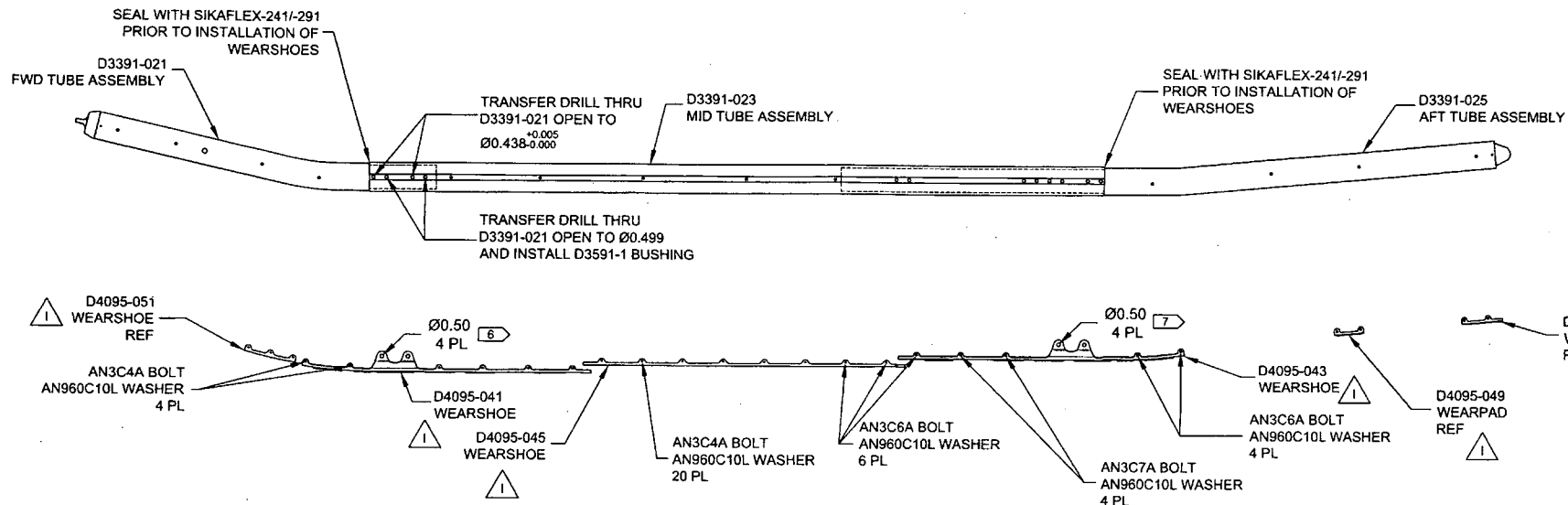
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D3391-043 ASSEMBLY

D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
2	D3591-1	BUSHING
1	D4095-041	WEARSHOE
1	D4095-043	WEARSHOE
1	D4095-045	WEARSHOE
1	D4095-047	WEARSHOE
1	D4095-049	WEARSHOE
1	D4095-051	WEARSHOE
24	AN3C4A	BOLT
10	AN3C6A	BOLT
4	AN3C7A	BOLT
38	AN960C10L	WASHER

GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY. CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL 0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.
- 6) FIT D4095-041 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL 0.50 HOLES FROM SADDLE TO D4095-041
- 7) FIT D4095-043 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH THE APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL 0.50 HOLES FROM SADDLE TO D4095-043

RELEASED
2011-11-04

DART AEROSPACE USA, INC		
KENT, WA		
DESIGN	PH	DRAWING NO. REV. 1
DRAWN	XDF	
CHECKED		D3391 SHEET 2 OF 8
MFG. APPR.		
APPROVED		TITLE SCALE
DE APPR.		
DATE	11.10.13	412 FLOAT SKIDTUBE NTS

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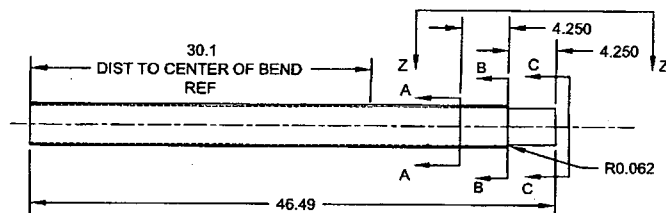
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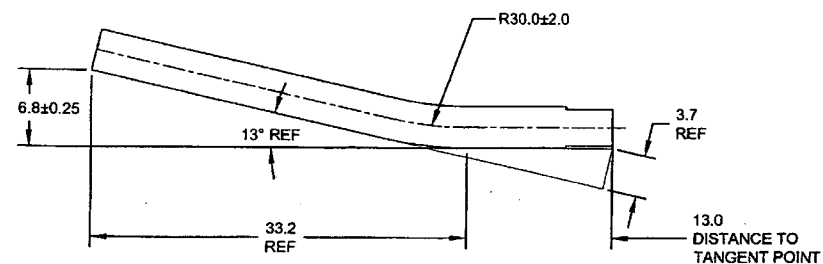
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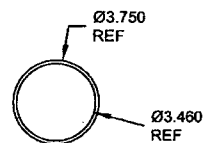
NOTE: Date & initial all entries



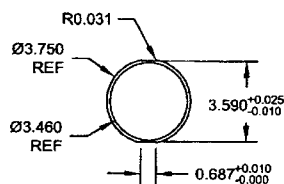
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



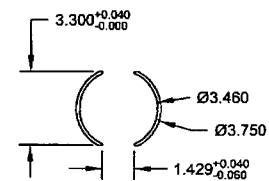
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



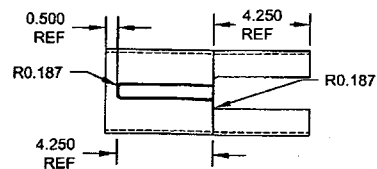
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X



VIEW Z-Z
SCALE 2X

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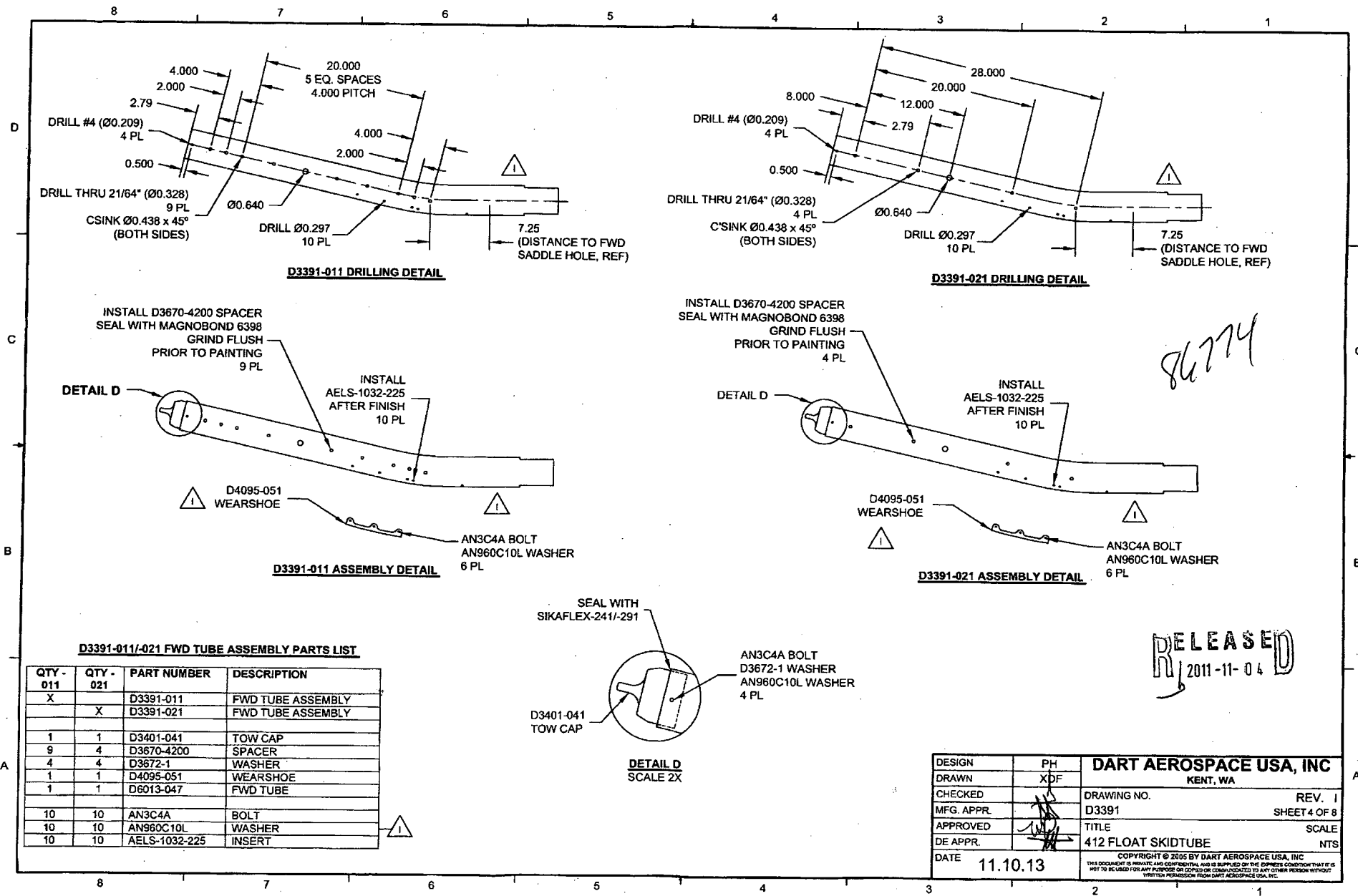
W/O:		WORK ORDER CHANGES					
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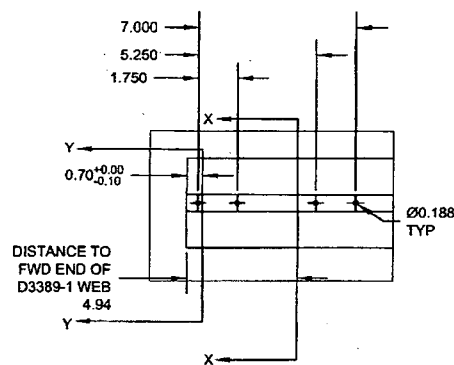
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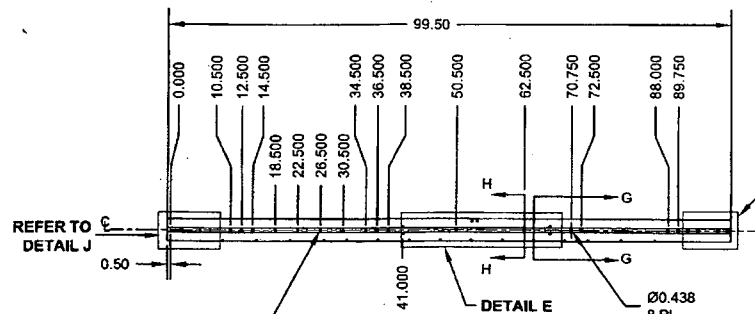
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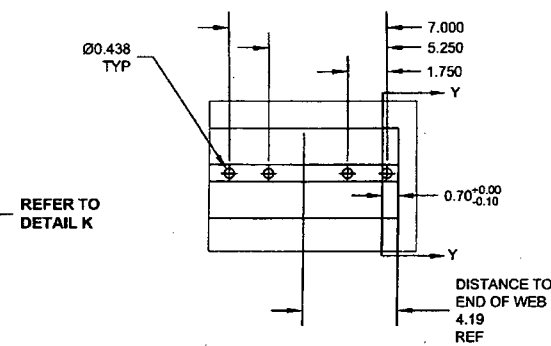
8 7 6 5 4 3 2 1



DETAIL J
SCALE 4X



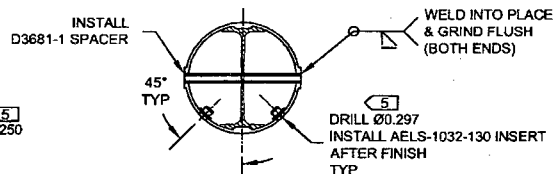
D3391-013 ASSEMBLY DETAIL
SCALE 5X



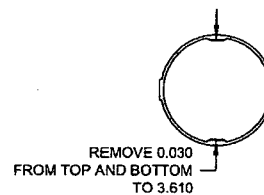
DETAIL K
SCALE 4X



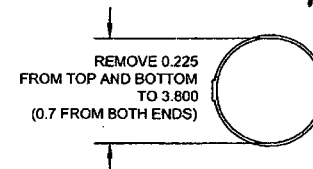
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



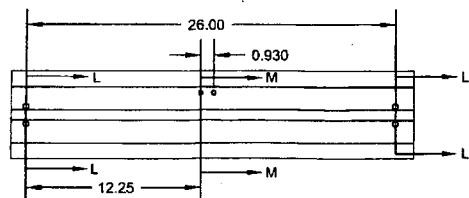
SECTION X-X
SCALE 5X



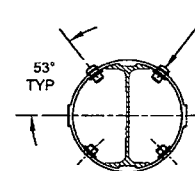
SECTION Y-Y
SCALE 5X

D3391-013 MID TUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
-013		
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW



DETAIL E
SCALE NONE

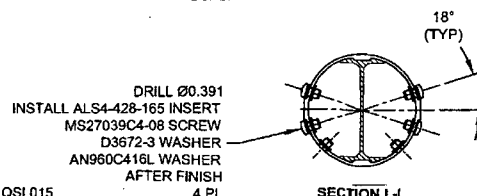


SECTION M-M
SCALE 5X

DRILL Ø0.297
INSTALL AELS-1032-130 INSERT
MS27039C1-09 SCREW
D3672-1 WASHER
AN960C10L WASHER
AFTER FINISH
4 PL



SECTION LL-LL
SCALE 5X



SECTION L-L
SCALE 5X

D3391-013 MID TUBE ASSEMBLY

- MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- WELDING: PER DART QSI 004

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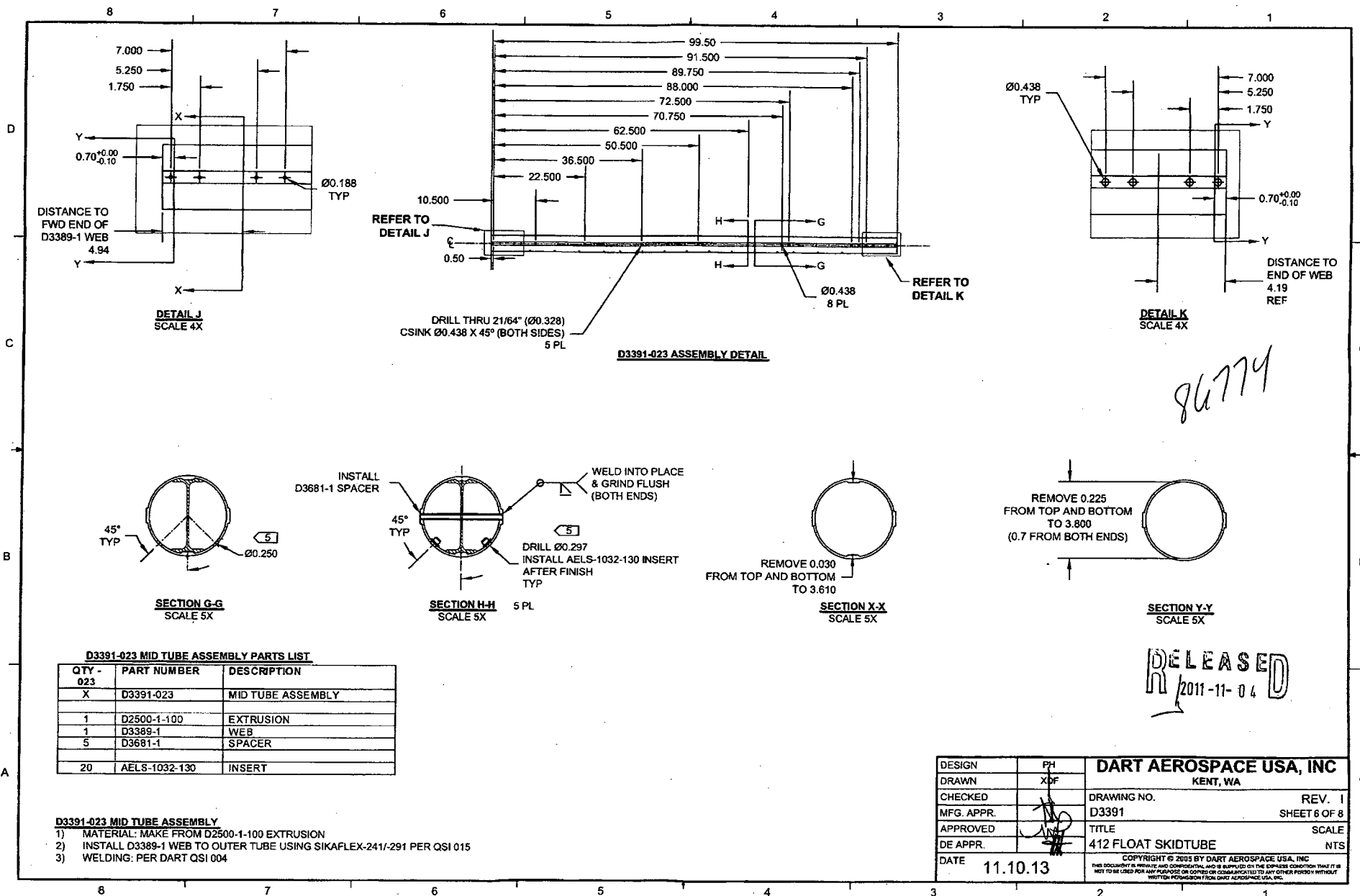
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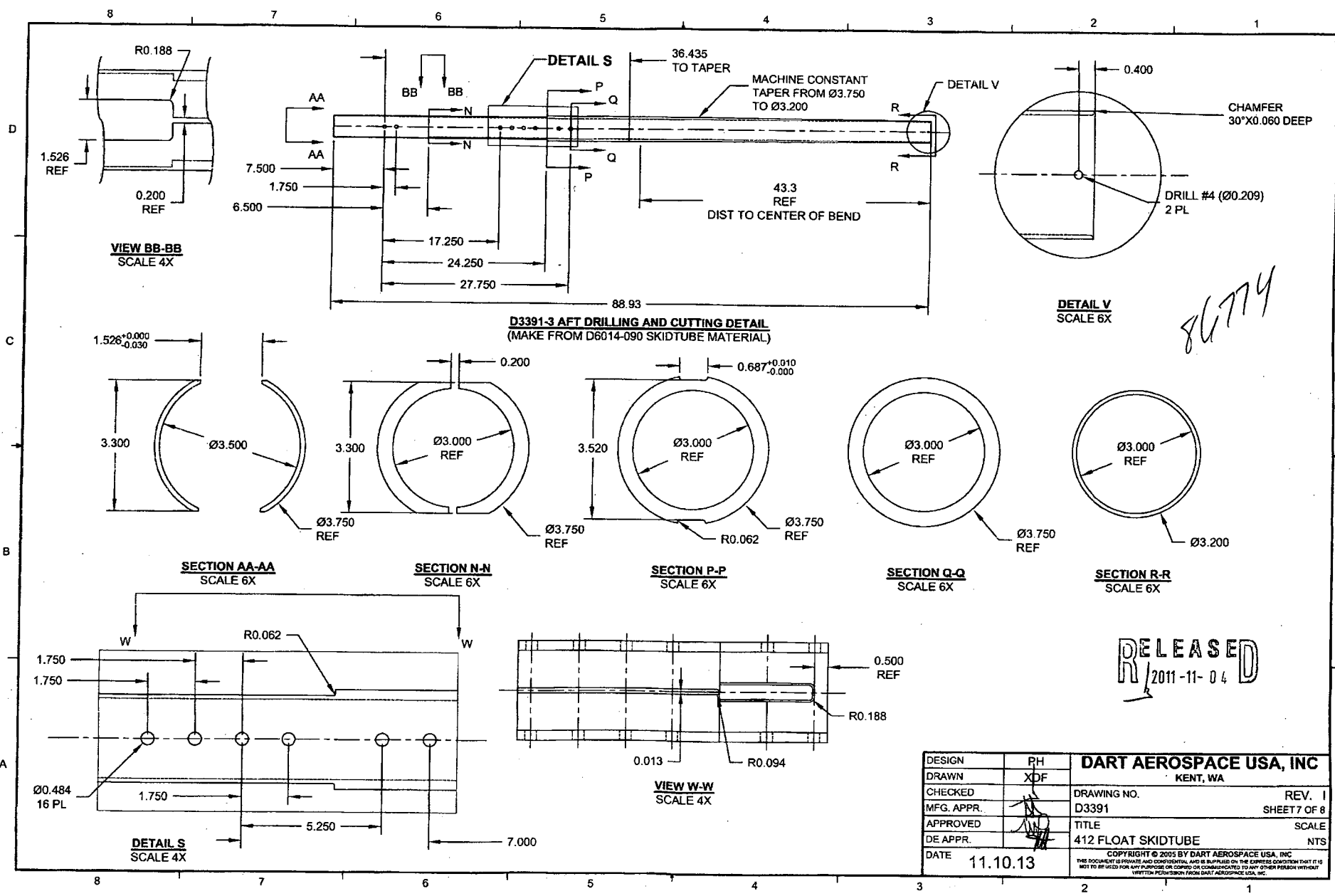
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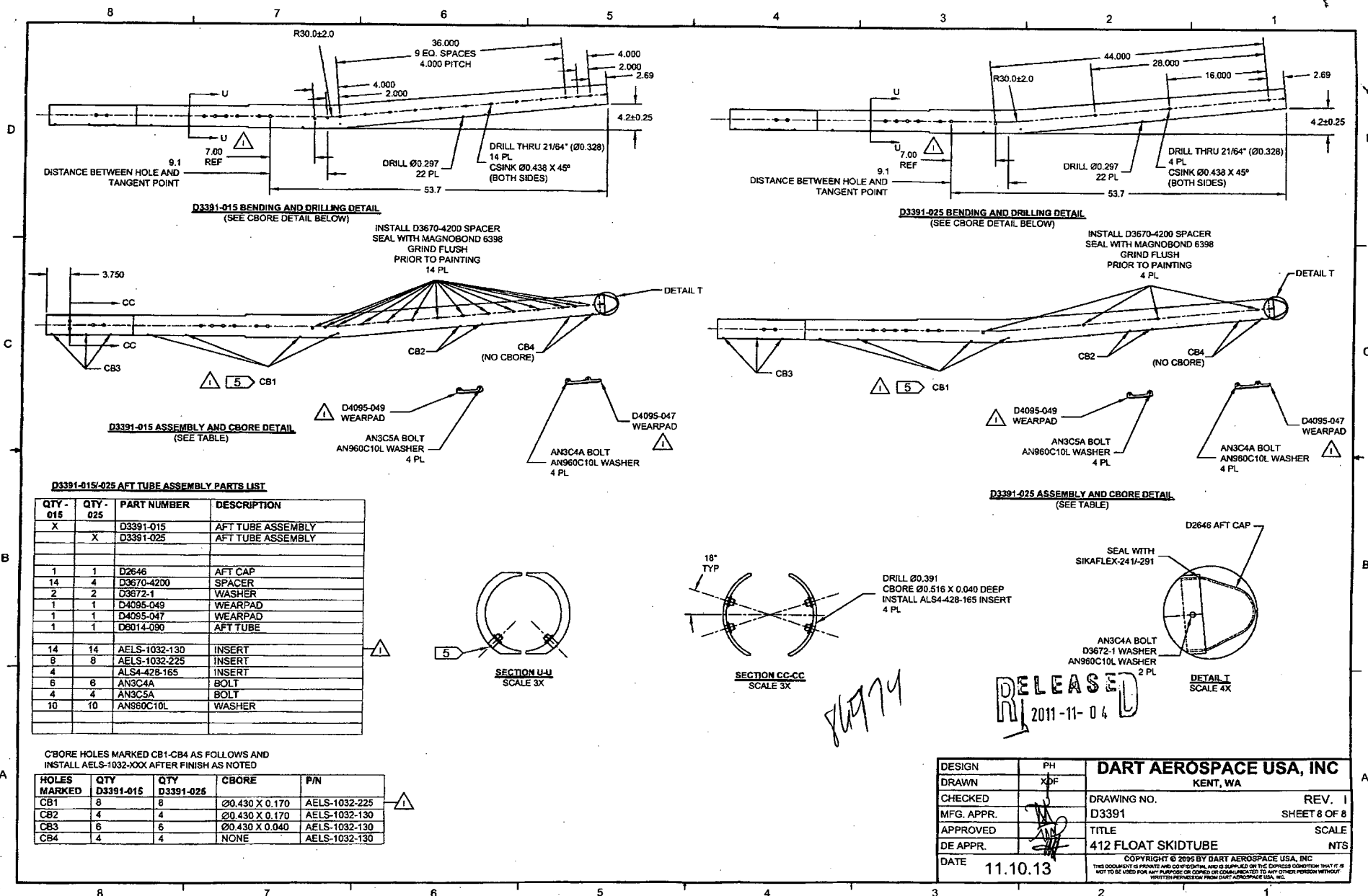
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